

COMMUNICATIONS

[EDITOR'S NOTE. The following communication originated in personal correspondence, and at the Editor's request the author consented to publication. The postscript, however, is extracted from a letter of December 4, and has been added without the expressed consent of the author because of lack of time for the exchange of letters. We trust, however, that the lack of full context will not do an injustice to the author.]

Editor, WILSON BULLETIN: In looking over the literature that has accumulated on my desk during a summer's absence in the field I find in a number of the WILSON BULLETIN a text for a few remarks which I trust may be taken in good part.

On page 86 (and following) of the June issue we find a list of stomach contents wherein partly digested fragments of birds are fully and subspecifically identified. The *species* of birds in question are undoubtedly correct, for that is within the possibilities of even fragmentary material; but that *subspecies* can be so recognized is open to doubt, to say the least. I think we may take it for granted in this case (as in many others) that the subspecific designations are made purely on geographic grounds, not from the details of the specimens themselves. It is against this common, almost universal, practice that I have, and do still, protest. It gives a pleasing appearance of scientific acumen and accuracy that is lacking in fact. If we base our distributions on determinations in faunal lists and other records, and then make those determinations from such supposed distributions we work in a vicious circle that gets nowhere and confirms what error there is without a chance of correcting it.

Determining subspecies geographically according to any particular authority involves three assumptions, viz.,

- I. That no subspecies ever occurs beyond its normal range;
- II. That those ranges are perfectly known to that authority;
- III. That all subspecies recognized by the authority are, *ipso facto*, valid, and none others can be considered.

I do not think that any one will subscribe to these dicta, and yet without each one no geographical identification can be reliable. In some cases the logical conclusion may lead to apparent super-caution, if such a word is allowable in science. but in others the danger to be avoided is great and obvious. Where can we draw the line?

Perhaps I have been regarded by some as an awful example of radicalism along this line. The trouble is that few have taken the pains to fully understand the points involved. Perhaps I can make my principles plainer and thereby add weight to the foregoing remarks.

I am not opposed to the principle of subspecies; they are real facts, and a very valuable concept to the biologist, but:—

- I. The subspecific unit is of less importance than the specific unit, and should not be treated with equality.
- II. The number of subspecies possible in a varying species may theoretically be infinite, and it is only the limitation of human observation that limits the number which it is expedient to recognize.
- III. In publishing a "record" we have no more right to guess at the subspecific identity than we have to guess at the specific identity.

All of which seems to me to be undeniable, though common current practice violates every one of the above principles. The only question that can be

raised regarding them is that of just the practical and useful limits of observation. Some say they are measured by the finest shades of differentiation which only the most intensively trained specialist can detect; others affirm that they are limited by the degree that can be demonstrated with reasonable certainty by any well trained student. This is just a question of degree and expediency, and is all the difference between the "splitters" and the "lumpers".

Sincerely,

P. A. TAVERNER.

National Museum of Canada,
Ottawa, Canada, October 19, 1928.

P. S. The intergradation test of specificity is unsatisfactory and subject to many criticisms, but in our present uncertainty as to what a species is I know of no more workable one. Some sort of convention or working hypothesis seems necessary, and is valuable so long as we keep in mind its provisional nature and stand ready to abandon it as soon as something better appears.

Species and subspecies are differences of degree only. Subspecific differences produced beyond a certain point become specific.

The critical point where a subspecies becomes a species is where a biological isolation is produced; that is, where distinct isolation is produced.

The only biological isolation is genetic. Geographical isolation is the accident of circumstance and not a racial character.

An intolerance to breeding together establishes biological isolation and establishes specific identity.

By this the presence or absence of intergrades becomes a logical criterion of specific or subspecific differentiation.

P. A. T.